

Responsible Construction

Responsible

Credit: 2

Points: 1

Outcome

The builder's construction practices reduce impacts and promote opportunities for improved environmental and social outcomes.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none"> The builder or head contractor has an environmental management system in place to manage its environmental impacts on site. The builder or head contractor has an environmental management plan to cover the scope of construction activities. The builder diverts at least 40% of construction and demolition waste from landfill. The head contractor provides training on the sustainability targets of the building.
Credit Achievement	1 point	<p>In addition to the <i>Minimum Expectation</i>:</p> <ul style="list-style-type: none"> Waste contractors and facilities comply with the <i>Green Star Construction and Demolition Waste Reporting Criteria</i>. 70% of construction and demolition waste is diverted from landfill, or less than 15kg/m²(GFA) of construction and demolition waste is generated and sent to landfill.

Additional information

Stage implementation

Strategy Brief Concept Design Tender **Construction** Handover Use

Synergies with other credits

- Inclusive Construction Practices

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)
- Goal 12 (Climate Action)

Relevant reporting initiatives

- None

Requirements

Minimum Expectation

The project must comply with **all four** of the following criteria:

- Environmental Management System
- Environmental Management Plan
- Construction and Demolition Waste
- Sustainability Training

Environmental Management System

The builder or head contractor (responsible party) must have a formalised systematic and methodical approach to planning, implementing, and auditing in place during construction.

For contracts valued at less than \$ 25 million, the responsible party must have an Environmental Management System (EMS) that complies with either the NSW Environmental Management System Guidelines, Enviro-mark Diamond or another recognised framework.

For contracts valued at over \$ 25 million, the responsible party must have an Environmental Management System (EMS) certified to a recognised standard such as AS/NZS ISO 14001, BS 7750 or the European Community's EMAS.

The EMS can be stand-alone or part of an integrated management system and must be valid for the duration of construction activities.

The builder or head contractor (responsible party) that achieved ISO 14001 certification part way through the project may be deemed to be compliant. For this to be granted, the following comments shall be addressed with further evidence.

- If changes were made to the Company Policy and Process (as part of the stage 1 Telarc Audit) to achieve the accreditation, the project could not have been operating to the required standard and therefore cannot demonstrate compliance as per the credit criteria. Please provide evidence of the company systems audit and summary of the process undertaken to prove compliance without any significant change.
- If the project was required to make changes to their process and/or significant defects were noted that were later remedied to meet the ISO requirements (company processes) then this method of proving compliance with this credit cannot be approved. This in effect would show that the project was not set up to the required standard before and during the construction period. Please provide evidence that the project was operating to the required standard and no significant deviations were identified.

Environmental Management Plan

A project specific Environmental Management Plan (EMP) must be developed to cover the scope of construction activities to assist the head contractor and its service providers to manage environmental performance conditions and impacts arising from demolition, excavation, and construction.

It must be implemented from the start of construction and include all works within the project scope.

Construction and Demolition Waste

Projects must divert at least 40% of construction and demolition waste from landfill.

A *Disclosure Statement* is required from waste contractors and waste processing facilities outlining how the company and their reporting aligns with the *Green Star Construction and Demolition Waste Reporting Criteria*.

Special waste and excavation waste are excluded from this requirement. However, soil generated from site clean-up works which incorporates soil leaving the site mixed with general construction and demolition waste must be included in the waste-to-landfill calculations, as it forms part of the building site's general waste profile.

Sustainability Training

The head contractor must provide the following training to 95% of all contractors and subcontractors present on site for at least three days:

- Information on the sustainable building certification(s) sought, including:
 - the sustainability attributes of the building and their benefits
 - the value of certification
 - the role site worker(s) play in delivering a sustainable building

Credit Achievement

In addition to the *Minimum Expectation*, the project must comply with the following criteria:

- Construction and Demolition Waste Diversion

Construction and Demolition Waste Diversion

Projects must divert at least 70% of construction and demolition waste from landfill or send less than 15kg/m²(GFA) of construction and demolition waste to landfill. If the kg/m² rate is achieved, this is considered sufficient to demonstrate compliance with the minimum requirement diversion rate.

The waste contractors and waste processing facilities must comply with the *Green Star Construction and Demolition Waste Reporting Criteria*.

Waste must be measured in kilograms.

Submission content

Submissions for this credit must contain:

- **Submission form**
- **Evidence** to support claims made in the submission

Recommended evidence:

Environmental Management System

- An auditor report showing compliance with the EMS. An auditor report for the organisation, rather than the site, can suffice. If it is for the organisation, the builder or head contractor must confirm effective use of the EMS on the particular site

Environmental Management Plan

- Demolition or Site Drawings indicating the structures on site at time of purchase, extent of demolition and retained structure and façade

Construction and Demolition Waste

- Cumulative waste report generated from the monthly waste reports provided by the waste contractor over the entire duration of construction and demolition works
- Disclosure statement outlining how the contractor or facility aligns with the *Green Star Construction and Demolition Waste Reporting Criteria*

Sustainability Training

- Evidence of training materials and register of attendance

Construction and Demolition Waste Diversion

- Compliance Verification Summaries from waste contractor(s) and waste processing facilities as detailed in the *Green Star Construction and Demolition Waste Reporting Criteria* document
- Demolition or Site Drawings indicating the structures on site at time of purchase, extent of demolition and retained structure and façade
- Cumulative waste report generated from the monthly waste reports provided by the waste contractor over the entire duration of construction and demolition works.

Alternate documentation can also be used by project teams to demonstrate compliance.

The recommended evidence listed above is applicable to the as built submission. See the *Design Assessment* section in the Introduction for more information on submitting evidence for the Design assessment.

The key requirement is that evidence is provided to support each claim made within the Submission form.

Guidance

Environmental management system

A formalised Environmental Management System (EMS) is a process that can be used to identify, manage, audit, and reduce environmental impacts, and generate reports on environmental performance progress. It should provide a systematic and methodical approach to preventing impacts and when they occur to planning, implementing, and reviewing an organisation's response.

The management system may be integrated with other management systems (such as occupational health and safety, risk registers etc.) to give a 'whole of business' approach.

All formalised EMS should follow the basic stages of high-level commitment, identification of impacts, review, target setting, action planning, monitoring, and reporting. The process is to be frequent and ongoing.

Environmental management plan

The NSW Environmental Management Systems Guidelines contains requirements of EMPs which is considered best practice.

Calculating the percentage of reduction in waste

To calculate the amount of waste diverted from landfill, the project team is required to report the total amount of waste generated and the total amount of waste diverted from landfill, and report on the proportion diverted as a percentage.

Calculating less waste going to landfill

Any number of initiatives can be used to achieve compliance, such as reusing or recycling construction waste, or implementing waste avoidance measures like incorporating design solutions that make use of modular and prefabricated installations.

Where the pre vs post Gross Floor Area (GFA) of the project site differs for major refurbishments, the GFA before the refurbishment took place should be used when calculating the maximum allowable waste going to landfill.

Volume to weight conversion

Waste contractors are often required to determine the weight of waste material streams from visual inspections of a load's volume for the purpose of reporting the estimated weights of material types removed from site (e.g., timber, steel, plasterboard, concrete, carpet).

The conversion factors in the Table below may be used to convert measurement of waste types from volume to weight.

Material	Density (tonne/m ³)	Material	Density (tonne/m ³)
Aluminium cans - whole	0.026	Asphalt / Bitumen	0.8
Aluminium cans - flattened	0.087	Bricks	1.2
Aluminium cans - baled	0.154	Car Batteries	0.375

Material	Density (tonne/m³)
Carpets	0.3
Cement Sheet	0.5
Ceramics	1
Clean Soil	1.6
Cobbles / Boulders	1.4
Commingled containers (plastic, glass, steel, and aluminium cans)	0.063
Concrete	1.5
Garbage	0.15
Garden / Vegetation	0.15
Glass bottles - whole	0.174
Glass bottles - semi- crushed	0.347
Green waste processed	0.3
Green waste unprocessed	0.15
Hazardous Wastes	0.2
Insulation	0.05
Litter trap	0.75
Metals	0.9
Oil	0.8
Other Textiles	0.15
Others	0.3
Paint	0.8
Paper / Cardboard	0.1
Plasterboard	0.2
Plastic containers - whole	0.01

Material	Density (tonne/m³)
Plastic containers - whole, some flattened	0.013
Plastic containers - baled	0.139
Rubber	0.3
Soil / Rubble<150mm	1.4
Steel cans - whole	0.052
Steel cans - flattened	0.13
Steel cans - baled	0.226
Wood / Timber	0.3
Waste oil	0.8

Source: Western Australia Waste Authority

Definitions

Responsible party

The Responsible Party is defined as the head contractor, principal contractor or similar. Where there are two parties, the responsible party is the one which carries the primary responsibility for implementing the EMS.

Excavation waste

Includes unwanted material resulting from excavation activities such as a reduced level dig and site preparation and levelling, and the excavation of foundations, basements, tunnels, and service trenches typically consisting of soil and stones.

Special waste

Includes asbestos waste and asbestos containing material, or other hazardous waste and restricted solid waste as defined by the NSW Environment Protection Authority Environmental Guidelines and Policies for Waste.

Sustainability education

This includes information on the certification of the building and other aspects of sustainability being implemented as part of the design and construction of the building.

Supporting information

The following resources support this credit:

- AS/NZS ISO 14001 Environmental Management
- BS 7750 Specification for environmental management systems
- Eco-Management and Audit Scheme (EMAS) European Commission
- NSW Environmental Management Systems Guidelines
- *New Zealand [Green Star Construction and Demolition Waste Reporting Criteria](#)*
- Western Australia Waste Authority, 'Converting Volumes to Tonnes'
- Enviro-Mark Certification: Environmental Management Certification & Programmes NZ | Toitū Envirocare (toitu.co.nz)